**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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| Appellant: Robert D. Feldman, et al. | § | |
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| Serial No.: 10/092,746 | § | Group Art Unit: 2613 |
| | § | |
| Confirmation No.: 2870 | § | Examiner: Wang, Quan Zhen |
| | § | |
| Filed: March 7, 2002 | § | **APPEAL 2009-004681** |
| | § | |
| For: METHOD AND APPARATUS FOR AUTOMATICALLY CONTROLLING OPTICAL SIGNAL POWER IN OPTICAL TRANSMISSION SYSTEM | § | |

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

**REQUEST FOR REHEARING AFTER DECISION OF THE BOARD MAILED AUGUST 20, 2009**

Appellants submit this Request for Rehearing After Decision of the Board mailed August 20, 2009 on grounds that the Board of Patent Appeals and Interferences errs in affirming the decision of the Examiner of Group Art Unit 2613 to reject claims 1, 3 to 10, 12 to 14, 16 and 18-20.

The argument for rehearing begins on page 2 of this Request. The Conclusion is on page 6 of this Request.

Appellants do not believe that any fee is due in connection with this Reply Brief. In the event Appellants are incorrect, the Commissioner is authorized to any fees due to make this filing timely and complete (including extension of time fees) to Deposit Account No. 50-4802/**ALU/124417**.

## ARGUMENT

The Board errs in affirming all rejections made by the Examiner on grounds that Maddocks et al. (U.S. Patent No. 6,483,616 B1, hereinafter "Maddocks") and Rowley (U.S. Patent No. 4,833,668, hereinafter "Rowley"), whether singly or in combination, teach "reducing the power level of optical data signal propagating in an optical fiber path in response to a loss of a counter-propagating supervisory signal in the optical fiber path," as set forth in representative claim one.

In the interest of brevity, Appellants will refer only to claim 1 and to set references. However, the following discussion/argument is applicable to each of the independent and, by extension, dependent claims.

Appellants respectfully submit that the Board misapprehended or overlooked the teachings of the cited references by finding that:

(1) the disclosed arrangements included "*counter*-propagating supervisory signal"; and

(2) the disclosed arrangements "reduc[ed] the power level of an optical data signal" in response to the "*loss* of a counter-propagating supervisory signal."

(A) Findings of fact numbers 3 and 4 of the Decision on Appeal are incomplete/inaccurate as stated. Findings of fact numbers 3 and 4 state in part that: "Maddocks describes both fibers 5 and 6 as carrying 'unidirectional signal[s]', and discloses that one alternative to using two fibers is to use 'a single optical fiber to carry bidirectional traffic single quote'" (col. 3, ll 43-44).

Maddocks describes an East-West unidirectional data signal co-propagating with an East-West supervisory signal in fiber 5. Maddocks also describes a West-East unidirectional data signal co-propagating with a West-East supervisory signal in fiber 6. Even in a single fiber embodiment, Maddocks provides through that single fiber and East-West unidirectional data signal co-propagating with an East-West supervisory signal, as well as a West-East unidirectional data signal co-propagating with a West-East supervisory signal in fiber 6. That is, Maddocks uses co-propagating supervisory

signals in either a two fiber embodiment or a one fiber embodiment. Maddocks does not use counter propagating supervisory signals in either embodiment.

> Maddocks clearly states that (col. 3, ll 43-58):
>
> In an optical communication system which uses a single optical fibre to carry bidirectional traffic, the above system requires modification, since a break in or damage to the fibre will result in some reflection of the transmitted signal back into a receive circuit. Thus, the receive circuit would continue to receive a signal even in the event of a break.
>
> This difficulty is overcome by transmitting over the supervisory channel an identifier signal which uniquely identifies a particular transmitter. In the event of damage to or a break in the fibre, receipt of an identifier signal which differs from that expected under normal operation will cause the laser amplifiers to be shut down. As before, the supervisory channel generates pulsed signals which are used to detect repair of the fibre, and to enable the high power optical amplifiers to be reset and enabled.

The above-quoted portion of Maddocks (as well as col. 1, ll 56-63) indicates that a problem to be solved in a single fiber embodiment is that of reflection of transmitted signal back into a corresponding receive circuit. This problem is overcome by using an identifier signal in the supervisory channel. Thus, each of the two co-propagating signals transmitted via the supervisory channel includes an identifier signal. When a fiber break reflects a supervisory channel signal, the receiver detects the identifier signal. If the identifier signal is associated with the corresponding transmitter, then a break must have occurred and the transmitter power is reduced. To the extent that Maddocks provides a supervisory signal, that supervisory signal is *co-propagated* with the transmitted data (whether transmitted correctly *or* reflected back from a fiber break).

(B) Findings of fact number 5 is incomplete/inaccurate as stated. Findings of fact number 5 states in part that Maddocks "provides a solution of shutting down ... amplifiers 15 and 8 in response to detected signal losses." (col. 2, l 6 to col. 3, l 11). Appellants respectfully note that a single processing element (laser control unit 22) detects a loss of frame condition as indicated by the supervisory extract unit 10, as well as a loss of signal condition as indicated by compensation amplifier 11. To the extent a supervisory signal is processed by supervisory extract unit 10, the supervisory signal is

co-propagating with the data signal. Further, shutdown occurs when both loss of signal loss of frame conditions are detected by laser control unit 22.

(C) Findings of fact number 6 is incorrect. Finding of fact number 6 states in part that "Rowley... describes an optical fiber system having "supervisory signals" propagating from supervisory and error detection circuits 16 and 16'." Appellants respectfully note that these error detection circuits do not propagate anything; rather, they process *received* data to "carr[y] out normal fault checks, including checks of the frame alignment signal, supervisory checks and checks for faults in line code." (Col. 5, ll 30-33). Supervisory and error detection circuits 16 and 16' process received data and, if the received data is inverted, merely *indicate* that a fault condition exists. There is no reduction of amplification power in response to this fault condition. The data processed by the supervisory and error detection circuits 16 and 16' is the data transmitted by, respectively, transmitters 14'and 14. To the extent that Rowley provides supervisory information within the transmitted data, that supervisory information is *co-propagated* with the transmitted data (whether transmitted correctly *or* reflected back from a fiber break).

In summary, the above inaccuracies, misapprehensions and/or errors of fact have led the Board to an incorrect understanding of the teachings of the cited references, their impact on one skilled in the art, and their applicability to the claimed invention.

(1) The disclosed arrangements do not provide a "*counter*-propagating supervisory signal". In each and every instance in the cited references of the use of a supervisory signal (or signal assisting with supervisory functions), the signal in question is always co-propagating with the data signal. Even if the data signal is reflected by a fiber break, the "supervisory signal" is also reflected by that fiber break and so remains co-propagating with the data signal.

(2) The disclosed arrangements do not "reduc[e] the power level of an optical data signal" in response to the "*loss* of a counter-propagating supervisory signal." The Maddocks reference reduces an optical amplifier power level when the transmitted

signal is received (i.e., reflected back to) the transmitting device. Stated differently, Maddocks functions in the opposite manner of the claimed invention; Maddocks reduces power in response to the presence of a specifically identified co-propagated signal (the reflected supervisory channel signal), while the claimed invention reduces power in response to the absence of a counter propagating supervisory signal.

One skilled in the art would not be motivated, taught or inspired by the co-propagating operation of the references to somehow arrive at an opposite result; namely, the counter-propagating operation of the claimed invention.

Therefore, while rejections are affirmed by the Board in error and reversal of the rejections is respectfully requested.

## CONCLUSION

For the reasons presented above and in Appellant's Briefs, Appellants respectfully submit that the rejections of claims 1, 3 to 10, 12 to 14, 16, and 18-20 are improper. Thus, Appellants respectfully request reversal of the rejections to permit allowance of claims 1, 3 to 10, 12 to 14, 16, and 18-20.

Respectfully submitted,

10/20/09
Date

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